

9-1-2008

### BS News

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SEPTEMBER 2008

# bs news

building services news

Face to Face ... Anna Kosiak  
Building Services Through Polish Eyes

Media Hub  
Services Connections for the Future

Designing Building Services  
Fire Suppression Systems





## OXIPERM® keeps Legionella AND your costs under control

### > CHLORINE DIOXIDE provides long-lasting freedom from Legionella and other germs

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> Reduce your energy costs

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OXIPERM® eradicates Legionella – without leaving an aftertaste

Grundfos (Ireland) Ltd  
Unit A Merrywell Business Park  
Ballymount Road Lower  
Dublin 12

info-ie@grundfos.com

<http://www.grundfos.ie> 47/iss8/1

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september 2008

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## opinion

## Media Queries Solar Pitch

It's quite amazing just how often the construction sector keeps shooting itself in the foot. Over the years we have seen many examples of this, the latest being the RICS *Greener Homes Price Guide* just published in the UK.

From the outset it should be stressed that there is nothing wrong with the contents of the *Guide*, and there is no doubt but that the figures quoted are accurate and verifiable.

It offers invaluable impartial advice on the cost, energy-saving, payback period, and disruptiveness of carrying out green improvements to a home. Studying it carefully — and in great detail — will undoubtedly help householders make the right choice. But how many homeowners do that?

The fact is far too many are influenced by popular media reporting of the contents of such guides. Hence the "Solar Panels Take 100 Years to Pay Back Installation Costs" story in *The Independent* on 3 September. There was an attempt to balance the story within the main body copy but the damage was already done by the banner headline.

*The Independent* has a considerable circulation in Ireland and, while it will not be seen directly by hundreds of thousands of people, it is commonplace for Irish-based media to pick up on such stories and put its own spin on them.

Guides such as this are essential for both the industry and end-users alike. However, when publishing them representative industry bodies need to be more media-savvy if the contents are not to be misconstrued or misrepresented.

*PS: This Guide is an excellent reference manual. Consultants and installers would do well to get their own personal copy.*



## trade news + product information



Dr Jean Christophe Carette,  
Head of Tour & Andersson's  
Hydronic College

### tour & andersson hydronic balancing seminar

Tour & Andersson, the world leader in hydronic balancing solutions, is bringing the informative CPD presentations of its Hydronic College to the Irish market with a seminar in Dublin at Croke Park Stadium on 21 October next. The seminar marks a new Irish focus for the company, which has worked on prestigious keynote projects around the world.

The seminar, on the "Three Conditions for Hydronic Balancing", is designed to allow building services and specification engineers to ensure that their waterborne heating, ventilation and air conditioning (HVAC) systems operate effectively through the use of balancing valves.

Despite the state-of-the-art BMS systems used in many buildings, hydronic problems can often lead to poor HVAC system performance. Proper hydronic balancing can improve occupant comfort levels and save energy, making it an essential tool for building services and commissioning engineers.

"The seminars will be led by keynote speaker Jean Christophe Carette, Head of Tour & Andersson's Hydronic College, and are designed to summarise Tour & Andersson's expertise and provide educational training on all aspects of design flow, differential pressure and compatibility," explains Maria Hooper, Marketing Manager at Tour & Andersson.

Contact: Ken Browne, Tour & Andersson. Tel: 087 - 280 1095;  
Maria Hooper, Tour & Andersson's Head Office. Tel: 0044 1582 866 377; [www.tourandersson.ie](http://www.tourandersson.ie)

### wilo's CC-Booster 'product of the year 2008'

Wilo's CC-Booster ("Comfort Controller") was voted Product of the Year 2008 at the recent Building Services Awards in London. Now in its 11th year, a top-class jury rewards products in 17 different categories, acknowledging performances and the innovative strength of companies in building services.

The "CC-Booster" controls up to six single pumps of a pressure boosting system in a fully-automatic way. Its core is a specially-programmed control (SPS) which influences the base-load pump's speed by means of a frequency converter and switches on or off additional peak-load pumps when required. The pumps are operated in a silent and energy-saving way.

Wilo's experience in pump control proves itself in the programming which ensures smooth control and monitoring algorithms. A multifunctional touch-screen in the switch cabinet door facilitates the operation of the "CC-Booster". It can also be integrated into building management systems by means of optionally-available modules.

Contact: Wilo Engineering —Tony Cusack.  
Tel: 061 - 227 566; Derek Elton. Tel: 01 - 426 0000;  
email: [sales@wilo.ie](mailto:sales@wilo.ie)



The "CC-Booster" switchgear from Wilo won the Product of the Year 2008 Award at the Building Services Awards in London. Pictured at the presentation were: Dan Wild, Wilo UK Sales Manager and Stuart Herritty, Wilo UK Managing Director.





# The full range of air conditioning solutions

ROOM AIR CONDITIONERS  
COMMERCIAL SPLIT SYSTEMS  
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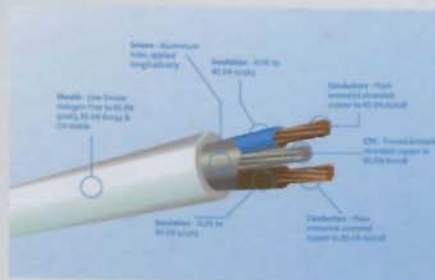
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Indoor Units



## trade news + product information

### IDH guardian only BASEC-approved solution to regs

IDH Guardian™ is said to be the only approved cable which meets the requirements of Clauses 522.6.3 and 522.6.6 of the Irish National Wiring Rules ET 101 3rd Edition latest version. It is also the only cable which meets the requirements in the UK for the new 17th Edition of the IEE Wiring Regulations (concealed cable regulation 522.6).



The safe, lightweight and easy-to-install answer to the safety and protection of cables installed in partition walls, ceilings and floors, IDH Guardian has also received BASEC approval to IS 273 and BS 8436. This permits use in a wide variety of applications, the advantage of a higher operating voltage, and confidence that it has been fully independently tested.

By installing BASEC-approved cable specifiers and installers are choosing cable that has been rigorously tested through a rigid approvals process. They can be confident that it will deliver without question what is expected, each and every time.

IDH Guardian™ offers significantly-reduced installation time over cable in conduit or SWA; has impact resistance; will fail-safe if there is nail penetration; EMC screening protection for use in sensitive areas; is low smoke halogen free (LSHF); compatible with expanded polystyrene; robustly lightweight; and RoHS compliant. Samples and/or a brochure are available on request.

Contact: Technical Sales Team, IDH. Tel: 051 - 421991; email: [sales@idh.ie](mailto:sales@idh.ie); [www.idh.ie](http://www.idh.ie).

### crystal clear online

Crystal Air has unveiled a new, pro-active website which contains a wealth of information detailing the company's strengths, those of its key trading partners, and providing a wealth of useful data and information.

It is simple to navigate with the various self-contained sections easy to access. There is also a very useful "links" area which provides immediate contact with related industry groups, representative bodies and sources of important and authoritative information.

Contact: [www.crystalair.ie](http://www.crystalair.ie)



### waters heads usher showering division

Darren Waters has been appointed Head of Showering at Usher Bathrooms with a brief to further develop and strengthen customer support in this specialist Division.

Usher Bathrooms has undergone considerable growth in recent years and this led to a number of key in-house changes, including the establishment of the new Showering Division.

This, along with the addition of other new product lines, also led to a move to larger 50,000 sq ft premises

"Here at Usher Bathrooms we are always looking for new ways to bring further specialist products to our customers", says Darren, "and we are very excited about this new venture, and especially the expansion to the Sonas Bathroom Collection".

Contact: Darren Waters, Usher Bathrooms. Tel: 01 - 817 9755; email: [darren@usherbathrooms.com](mailto:darren@usherbathrooms.com)



## paddy power bets on hitachi and wins

Fail-safe communications systems are essential for most business sectors but they are absolutely critical for the gaming industry. Consequently, when Paddy Power was looking to install a new air conditioning system in the comms room at its Dublin headquarters, it turned to Tech Refrigeration and Hitachi for advice.

The proposed solution was Hitachi's CS Net Web, a stand-alone computer system network for the remote control and monitoring of air conditioning systems. This web-based solution is firmly established as an industry favourite and is installed in many locations throughout the country.

However, CS Net Web is interrogation-based with the operator having to dial in to check system status. Paddy Power required automatic alarm activation in the event of a system problem and so Hitachi's Chief Designer in Barcelona devised new software to do just that. Should there be a problem now at any of its locations the system automatically activates and notifies an alarm via the internet, 24/7, to designated contact points.

While the software solution devised by Hitachi is quite sophisticated, applying it is simple. Even existing CS Net Web installations can be upgraded merely by plugging in a disc and uploading the software.

Contact: Fergus Daly, Hitachi Europe. Tel: 01 - 216 4406; email: [fergus.daly@hitachi-eu.com](mailto:fergus.daly@hitachi-eu.com)



[www.kingspansolar.ie](http://www.kingspansolar.ie)



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### kingspan solar, the perfect part L partner

The Kingspan Solar range of products, and the team supporting them, are claimed to be the perfect partner for addressing the recent Part L Building Regulations. The product range incorporates Thermomax – the original and still one of the leading solar vacuum tube collectors in the world; and Solamax — Kingspan Solar's new Tandem Photovoltaic range.

Locally-based experts, including new Sales Director for Ireland Alan Hogan (left), means that choosing Kingspan Solar gives customers a full service partner from product, through to installation and ongoing customer care.

The recent Directive requires new dwellings to implement renewable energy solutions to meet a number of key stipulations. Thermomax vacuum tube collectors are perfectly placed to meet the minimum requirements, supplying up to 70% of users' annual hot water needs. They provide the mandatory renewable input of 10kWh/m<sup>2</sup>/annum contributing to domestic hot water heating, space heating or cooling.

By installing Photovoltaic technology, Solamax will meet the Part L stipulation of providing 4kWh/m<sup>2</sup>/annum of electrical energy. Using

solar cells to convert sunlight directly into electricity, the Solamax product also contributes to a reduction in greenhouse gases.

Both the Thermomax and Solamax products significantly help to meet the 40% improvement in energy efficiency required for new dwellings. In fact, Kingspan Solar's comprehensive range of products achieves, at least, the minimum requirement in the majority of projects.

Both the Thermomax and Solamax ranges can be seen on the Kingspan Solar stand at the forthcoming Plan Expo in the RDS (4/5/6 November 2008). Staff will be on hand to talk about renewable solar energy and the benefits such a system offers.

Contact Kingspan Solar. Tel: 048 - 9127 0411.

### legionnaires disease training course

The Legionnaires' Disease Sub-Committee of the HPSC Scientific Advisory Committee has prepared revised guidelines for the management of Legionnaires' Disease in Ireland. These guidelines are now available for consultation and can be found on the website at [www.hpsc.ie](http://www.hpsc.ie)

Against this background, and the recent outbreak in Dublin, Knight Consultancy & Training has organised a one-day training course which will take place at Bewleys Hotel, Newland's Cross, Dublin 12 on Wednesday, 15 October.

The courses will be presented by Dr John Alvey. John has 30 years experience in water treatment, many of which were spent as a risk assessor and expert on Legionnaires' Disease. He is a past Chairman of both the Water Management Society and the Water Treatment Sector Group of the British Association for Chemical Specialities. He is also a founder-member of the Code of Conduct Association (now known as the Legionella Control Association) and sits on the management committee of this organisation.

The cost of the course is €260 plus VAT per delegate. This includes lunch and training material.

Contact: Mike Knight, Knight Consultancy & Training. Tel: 0044 7966 196383;  
email: [mikehknight@blueyonder.co.uk](mailto:mikehknight@blueyonder.co.uk)

Unit A6, Centre Point Business Park, Oak Road, Clondalkin, Dublin 22

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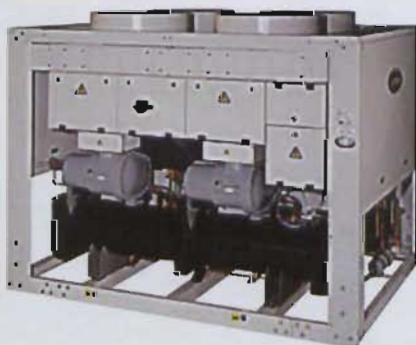
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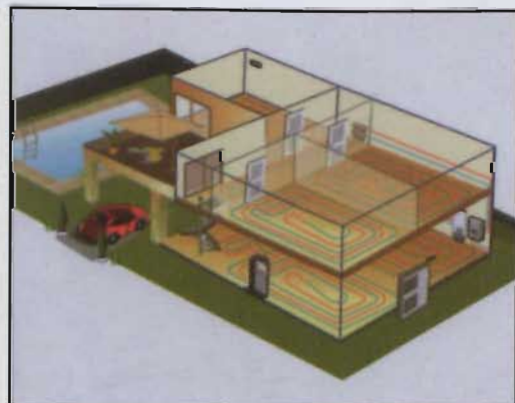
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## Residential Heat Pumps



Renewable Energy  
 Solutions



## trade news + product information

### toshiba daiseikai no flight of fancy!



Toshiba dealer Thermequip of Letterkenny recently installed a number of high-efficiency Toshiba split systems in various locations at Carrickfin Airport in Donegal. Toshiba RASB10 Daiseikai wall units were chosen for the office areas and a floor-standing unit was chosen for the control tower.

Daiseikai RASB10 boasts one of the highest energy efficiencies on the market with a quoted COP of 5.08 and an hourly operating cost of 12c/kW hr at 100% output, producing 3.2kW of heat.

Carrickfin is just one of a number of regional airports with Toshiba heat pumps installed. The very first Toshiba VRF system in Ireland was installed in Kerry Airport by Comfort Cooling in 1987 and has been working ever since, providing full cooling and heating.

Weston Airport in Dublin has also been fitted with Toshiba heat pumps. Specialist contractor Kelvin Engineering supplied and fitted 16 Toshiba RASB10 Daiseikai wall units to serve the admin offices and Toshiba cassettes were used to provide critical cooling to the control tower and full comfort conditions for the restaurant area.

Contact: Derek Phelan, GT Phelan. Tel: 01- 286 4377; email: derek@gtphelan.ie

### retro-style football shirts from honeywell

Heating installers can claim free retro-style football shirts from Honeywell simply by returning 25 bar codes from Honeywell VT117, VT200 or VTL120 TRVs (thermostatic radiator valves), on sale at all merchants. The offer is also available on Honeywell VTL220 and VTL320 TRVs purchased from Plumb Center.

The promotion offers a large choice of classic national and international shirts, including Gordon Banks' classic World Cup winning jersey from 1966 and Pele's No:10 shirt from the 1970 World Cup. The promotion runs from 1 September until 12 December 2008.

Applications with bar codes as proof of purchase must be received at Honeywell by 12 December 2008. On validation, applicants will receive an email containing a number which can be used to redeem a replica shirt direct from the supplier. Redemption of claim numbers must be made by 28 February 2009.

For details visit [www.honeywelluk.com/promotion](http://www.honeywelluk.com/promotion)

### copper contributes to green olympics

Specifiers selecting materials for the construction of the Beijing National Stadium, also known as the Bird's Nest, chose over 20,000m of copper for both its domestic cold water and hot water plumbing systems.

Copper plumbing was also widely used in other Olympic facilities, such as Water Cube (the National Aquatics Centre) and the Beijing Shooting Range Hall, as well as the new Beijing Capital International Airport 1st Terminal Building.



Copper is 100% recyclable, and recycling uses only 15% of the energy that would be used to mine and produce the same amount of copper. Another important advantage is copper's natural antimicrobial properties.



## trade news + product information



## differential solar controllers from manotherm

The new differential solar controllers — SD1, SD2 and SD3 — from Manotherm are intended for use in solar systems with flat-plate or tube collectors to control the circulation of the pump, to cool the storage tank and, if necessary, to reheat by means of priority control.

They each consist of a digital display and control unit, as well as a collector and storage sensor. If the temperature difference adjusted on the controller is exceeded (the collector sensor is then warmer than the storage tank sensor), the circulation pump is switched on and the solar energy is supplied to the storage tank.

If the temperature difference falls below a pre-set value, the pump is switched off. When the temperature falls below the required temperature in the draw-off area of the storage tank, a priority control signal is sent to the actual heating controller.

## Features include:—

- LCD display with temperature, operating state and heat quantity calculation;
- Simple programming;
- Automatic configuration and sensor recognition;
- Pump-kick function;
- Daily and total yield (in kW/MW).

Contact: Bob Gilbert, Robert Gilbert or Conor Stead, Manotherm. Tel: 01 - 452 2355; email: [info@manotherm.ie](mailto:info@manotherm.ie)



# ITT

## The clock is ticking

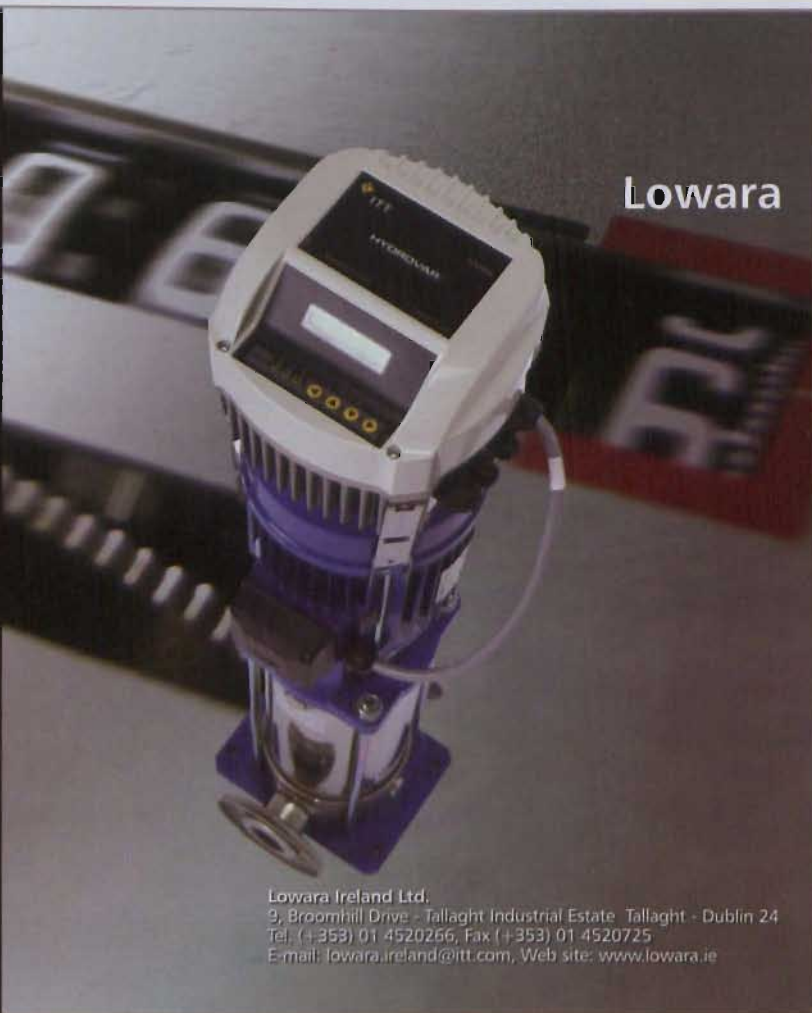
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## trade news + product information

### hevac unveils new website

Hevac has unveiled a new website at [www.hevac.ie](http://www.hevac.ie) containing easily-accessed images, price lists, brochures and technical manuals for its entire product range.

Site visitors can browse the full portfolio which includes energy-efficient central heating boilers, renewable solutions, hot water heating and hot water storage units, climate and energy controls, panel, cast iron and specialist radiators, pipe valves, fittings and other hot water heating accessories.

Hevac's reputation as a specialist supplier to the building services sector dates back to the formation of the company in 1974. The scope and diversity of its product portfolio, coupled with a staff complement representing a vast wealth of experience, practical know-how and technical excellence, are the key strengths it brings to the marketplace.

Apart from news, product information, case studies, a jobs section and contacts, the site will also regularly feature special offers.

Contact: Karl Carrick, Hevac. Tel: 01 - 419 1919; email: [kcarrick@hevac.ie](mailto:kcarrick@hevac.ie); [www.hevac.ie](http://www.hevac.ie)



### sll irish lighters competition

Agreement has been reached with SLL in London for an Irish Lighters competition to take place in Dublin next April. It will be an all-Ireland competition and will be launched at the Belfast Masterclass in the Autumn.

The competition is open to any designer in Ireland producing a design in Ireland, and it is hoped to attract the best and most innovative lighting projects/designs in the country. Short abstracts outlining a description of entries will be considered by a review panel in December 2008. A shortlist of entrants will then be notified to produce a final paper/presentation by February 2009.

Industry experts will sit on the review panel and the final judging panel.

Criteria for judges is not finalised yet but is likely to include originality/innovation, visual enhancement of environment, engineering design, environmental impact/sustainability, and quality of paper/presentation. A main sponsor from the lighting industry is also being sought.

Contact Kevin Kelly, DIT, email: [kevin.kelly@dit.ie](mailto:kevin.kelly@dit.ie).



Jackie Merriman, Sales Administrator

### hitachi strengthens irish team

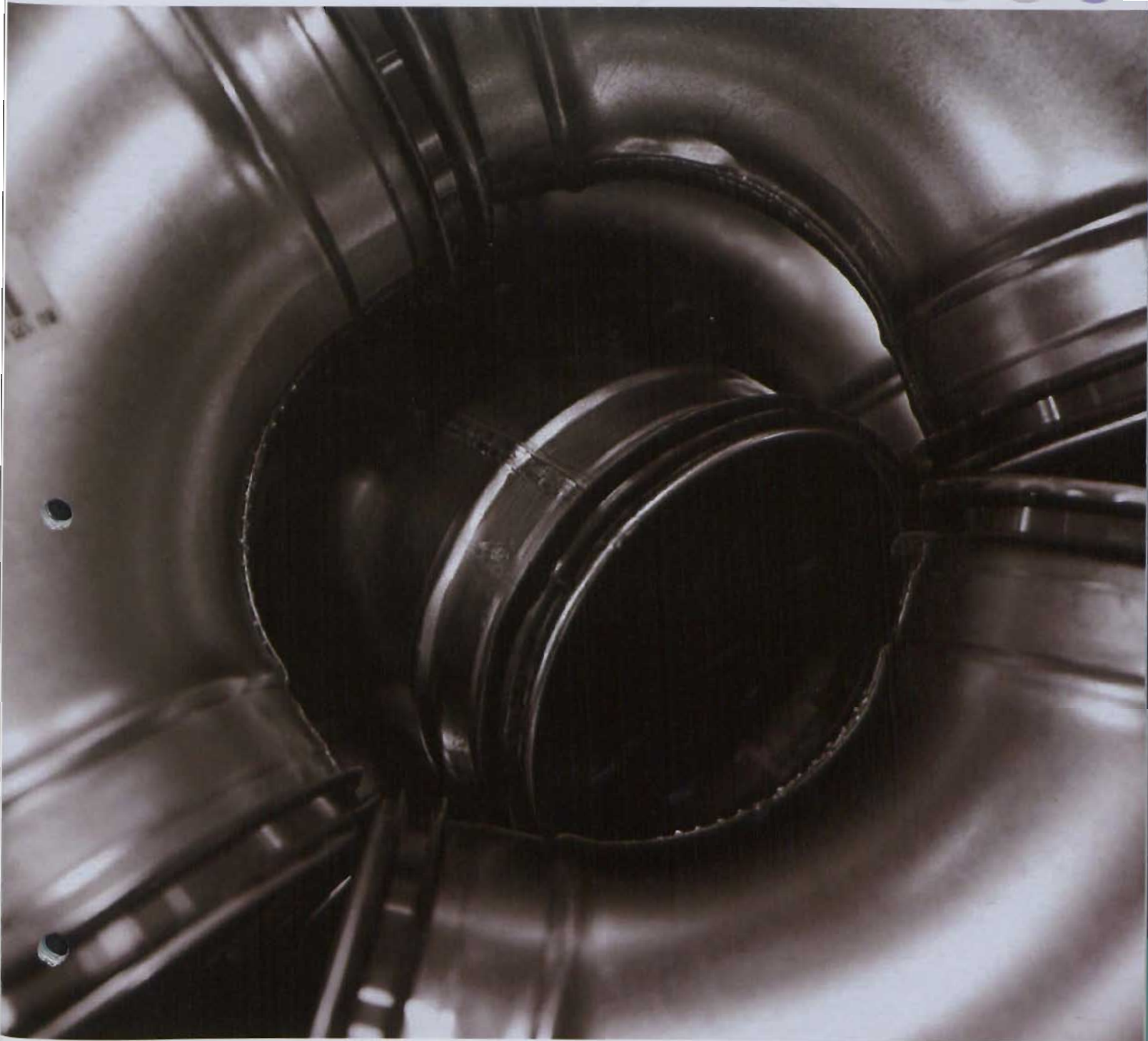
As Hitachi's market penetration continues to grow Fergus Daly, General Manager of the Irish office, has made additional personnel appointments to strengthen the service provided.

Jackie Merriman has joined as Sales Administrator and she will now coordinate all administration and customer support in this area.

Meanwhile, Ciaran Mc Carthy has been appointed Area Sales Manager while Cormac Nolan is the new Applications & Design Engineer.



Ciaran McCarthy, Area Sales Manager with Cormac Nolan, Applications & Design Engineer



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## trade news + product information

### beat legionella with grundfos alldos oxiperm pro

Responsibility for water quality is now top of the agenda in building services with ever-stricter legislation setting new targets. Both system designers and product manufacturers have risen to the challenge, the new Grundfos Alldos Oxiperm Pro® chlorine dioxide disinfection system being a typical example.

The brand name Oxiperm® stands for highly-effective, compact chlorine dioxide preparation systems and user-friendly, ergonomic design. Smart electronics and sensor technology, combined with unique calibration technology, ensure optimum precision and process reliability.

Since the launch of Grundfos Alldos Oxiperm Pro® chlorine dioxide disinfection system, the demand has increased dramatically. This is not just because chlorine dioxide is an extremely effective disinfectant against Legionella bacteria, but also because the system is easy to use and extremely cost-effective.



Oxiperm Pro is available in two capacity levels, producing 5g and 10g of chlorine dioxide per hour respectively. This capacity is sufficient to treat up to 50m<sup>3</sup> of drinking water per hour. A wide range of additional accessories makes assembly and start-up simpler. In fact, the system can be connected and taken into operation without even interrupting the building's water supply. Operation and maintenance is performed from the front so the compact Oxiperm Pro system can be installed in confined areas. Its robust design ensures high operational reliability and lower maintenance costs. Furthermore, the newly-designed control system makes for straight-forward and user-friendly operation.

Contact: Deirdre Flynn, Grundfos (Irl). Tel: 01 - 408 9800; email: [dflynn@grundfos.com](mailto:dflynn@grundfos.com)

### daikin to acquire rotex

As we went to press Daikin Europe NV announced an agreement with the principal shareholders of Rotex of Germany to acquire 100% of the Rotex Group Companies which specialises in heating products and complete heating systems. The final transfer of business is expected to take place on 1 October 2008.

Traditionally, Daikin's core business was air conditioning, applied systems and refrigeration but, two years ago it entered the heating sector with the introduction of the Aitherma air-to-water heat pump, based on its own heat pump technology.

The acquisition of Rotex will considerably strengthen Daikin's presence in the heating sector as it will add a vast range of market-leading boilers, solar and underfloor heating products to the portfolio. *bs news* will report further as the precise details of the acquisition emerge.

Contact: Richard Smith, Daikin Europe NV (Irish Office). Tel: 01 - 642 3430; email: [info@daikin.ie](mailto:info@daikin.ie)



### part L guidance document from IDL

Insulation Distributors Limited (IDL) has developed a Technical Guidance Document which outlines the new building regulation standards Part L that came into effect in June 2008.

This is an easy 'ready reckoner' to the requirements needed to fulfil the new regulations. In a handy A5 site-booklet size, it is a useful tool for people who require information and product knowledge and make-up for certain applications.

Contact: Louise Mooney, SIG Ireland. Tel: 01 - 499 2430; email: [louisemooney@sig.ie](mailto:louisemooney@sig.ie)



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With Hitachi's Set Free VRF range it's easy:

- Simple connectivity across all indoor and outdoor product ranges with our unique H-Link II transmission system
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- Central control via CS-NET Web for continuous remote monitoring
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- Free system commissioning by Hitachi's specialist team

And with off coil temperature limitation, optional static settings, varying fan curves, ergonomic chassis design and variable capacity settings, Set Free VRF is highly discreet and won't cause a draft, just easy-to-control comfort.

\*Subject to terms and conditions



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email: [aircon.ireland@hitachi-eu.com](mailto:aircon.ireland@hitachi-eu.com)

web: [www.hitachiaircon.com](http://www.hitachiaircon.com)

Published by ARROW@TU Dublin, 2008

**HITACHI**  
Inspire the Next





Martin Carpenter  
e: martin.carpenter@pmg.ie

# designing BUILDING SERVICES

## fire suppression systems

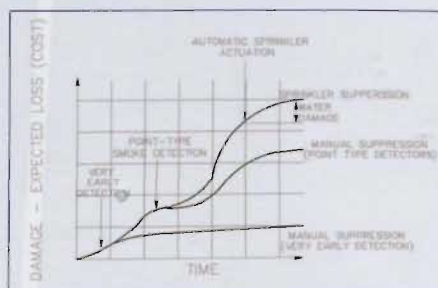
This article is presented to assist designers, consultants and end-users identify the critical principles employed when designing gas suppression systems. These systems are invariably installed to protect expensive items of equipment or spaces such as bank vaults and telecommunication rooms. The intention here is to help the designer produce a document for suppression systems which provide a high degree of protection, using current technology, without incurring unnecessary expense.

The basic steps in eliminating damage from a fire are:—

- (1) Detect the fire at the earliest stages. This can be achieved by detection of flame or heat, or to capture tell-tale signs of an incipient fire such as smoke particles (typically 10 to 100 microns diameter); and then
- (2) Eliminate the threat of fire by means of a gas suppression system;
- (3) Containment of a fire by either watermist/sprinkler or the Fire Brigade.

**Figure 1** indicates the cost differential for detection systems and fire containment. The figure indicates that early detection

minimises the cost of damage. In the case of telecommunication rooms the cost of downtime necessitates the need to ensure minimal or no damage/downtime.



**Figure 1** indicates the cost differential for detection systems and fire containment

Two main categories of suppression gases exist, namely:—

- (1) Naturally-occurring inert gases such as Nitrogen, Argon and blended concentrations of same;
- (2) Manufactured suppression gases such as Novec 123 or FM 200.

A third category, not technically suppression but fire containment, is "watermist". For the purposes of this article details of "watermist" will not be covered as the technology, although available, is not widely accepted on account of cost of equipment installation. However, it is expected that this type of containment will become the

standard for protecting high value enclosures and equipment in the near future.

Inert gases operate by limiting oxygen concentration to between 12% and 16%. Between these levels, a fire will not continue to burn. If the level of oxygen concentration remains between 12% and 16% for a 10-minute period, then the fire will not reignite. Manufactured gases systems operate by removing the heat and energy from the source of the fire and do not significantly reduce the oxygen in the protected space.

Both types of systems have their merits and demerits. This article will not go into the specific differences between each category. However, each application needs to be reviewed and advice sought from the specialist supplier as to the most suitable gas for the application concerned.

The factors which determine this decision include:—

- The gas cylinder space available;
- Run of pipe;
- Storage location of cylinders;
- Operating temperature of enclosure;
- Sealing of the enclosure venting to external;



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## fire suppression systems

- Cost;
- Environmental issues;
- Maintenance and service of system;
- Local suppliers of suppression gas;
- Transportation of suppression cylinders for refill.

Automatic fire detection and extinguishing should be provided by either a conventional gas-release control panel or by means of an addressable control panel (see **Figure 2**). The system should be left in automatic mode at all times if the design concentration is below the NOAEL (No Observable Adverse Effects Level) concentration.

"Double Knock" fire detection is a belt and braces solution, namely on detection of a fire by one detector the alarm will sound, the system will instruct key equipment to shut down and remove the source of the fire. Computer equipment back-up

procedures are set in motion and the "house fire system" is alerted to the impending problem. If the threat persists a second detector will detect the smoke and alert all occupants to vacate the area as the gas will be released within the next 60 seconds. The house system is fully alarmed and a fire signal is activated throughout the premises.

Once released the gas is held within the space for 10 minutes to ensure that the fire threat is completely removed and a fire will not reignite from a hot surface. Then suitably-trained personnel wearing breathing apparatus can enter the space and assess the damage. As the room is under pressure the opening of the door will allow any fire bi-products to rush out of the space. The likelihood of fire bi-products is almost zero as the detection system, if well designed, would have operated to ensure no fire occurred.

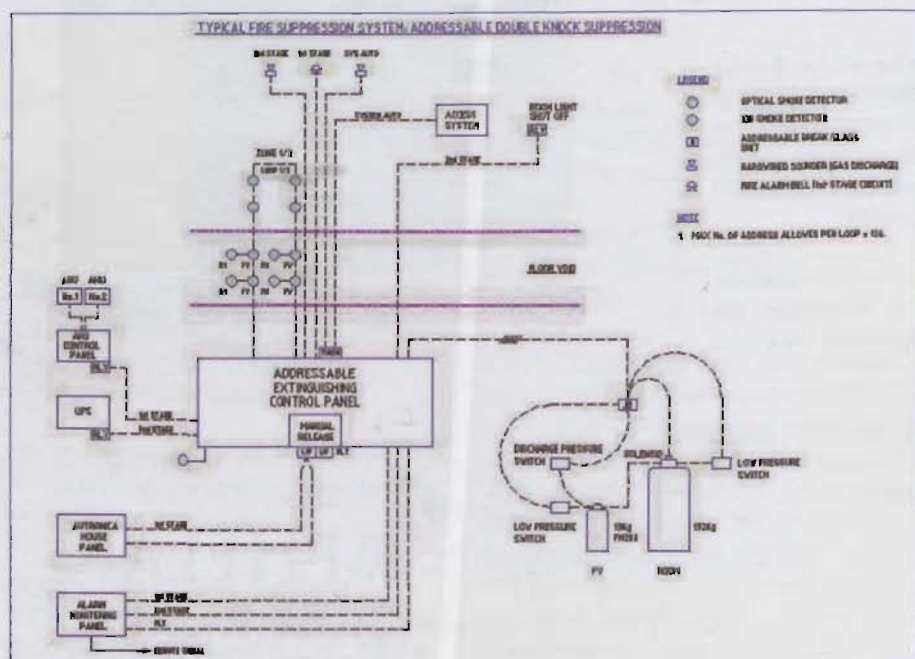
Manual operation of the system must be available at the extinguishing control panel. The panel, located outside the space, should give visual indication of when the extinguishant has been released. Every exit from the enclosed space requires a master panel or repeater panel located next to the door, indicating the status of the extinguishing system with operation at the extinguishing release as optional. Warning labels are required at each entrance indicating that the area is protected by a gaseous fire suppression system.

Standards for design, equipment, installation, testing and maintenance of any suppression system should be in accordance with the following Standards:

- NFPA 2001: Clean Agent Fire Extinguishing Systems;
- ISO 14520: Gaseous Agent Halon Replacement Extinguishing Systems;
- BS6266: Protection of Electronic Data Protection (EDP) rooms;
- IS 3218: Code of Practice for the Fire Detection and Alarm Systems for Buildings.

The name of the manufacturer, part numbers and serial numbers should appear on all major components. All devices, components and equipment should be the products of the same manufacturer or be certified by the manufacturer as compatible with devices, components, and equipment of the manufacturer.

The enclosure or protected space should be of adequate



**Figure 2 — Automatic fire detection and extinguishing should be provided by either a conventional gas-release control panel or by means of an addressable control panel**





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### Electric VRF & Gas Engine

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### AHU's, Chillers & Fan Coil Units

Over the past 70 years CIAT has emerged as a European leader in the field of air conditioning, air handling, heat exchange and heating by renewable energy. A true industrial group, CIAT designs and manufactures solutions for medium and large-scale commercial projects; and residential, healthcare and industrial applications.

### Close Control

Edpac designs and manufactures a complete range of precision air-conditioning equipment for the computer, telecommunications, specialty storage and building services markets. Located in Cork with modern manufacturing facilities in Carrigaline and Newmarket, it has been supplying products worldwide for over 20 years.

### Chilled Beams

Crystal Air provides a number of chilled beam solutions from high-quality European manufacturers whose different technologies can satisfy almost any project requirement. Active, passive, 2-pipe, 4-pipe and additional ventilation can all be engineered, providing low energy, long-life and highly-efficient performance.



**Crystal Air** is one of Ireland's leading indoor climate control specialists. It offers a broad portfolio of products such as split systems, VRF, GHP, heat recovery, chillers, air handling and close control units. It also provides complete turnkey solutions, including system design, installation, engineering support, after-sales service and maintenance. With professional project management of the entire project, clients and specifiers alike are assured peace of mind.





## fire suppression systems

integrity (airtight) to retain the design concentration for 10 minutes. A total leakage opening of 10% is considered acceptable for the protected space. This is harder to achieve for a smaller room than a large space. Room integrity (fan) tests are described in ISO 14520-1:2000 Annex E or NFPA 2001.

Vents to external should be automatically dampered closed prior to release of the extinguishant. An inspection should be made by the specialist installer to ensure that all the required dampers, door bottom seals, weather-stripping and foam sealant have been installed and that the areas protected will contain the suppression gas to the minimum height for the 10 minutes required.

Where the protected area has either a floor void or ceiling void, these too should be protected, employing a minimum design concentration not below that of the main room compartment. It must be noted that if a suspended ceiling is present, then all tiles adjacent to the gas suppression nozzles should be clipped and secured in place.

The design concentration of FM200 is only 7.5% room volume (most commonly supplied suppression gas) so, in most circumstances with a room strength of say 500 Pascal's (modern construction), the enclosure usually will not require pressure relief venting. This is unlike enclosures protected by inert gas suppression systems where design concentrations are to the order of 55% room volume and pressure relief venting is a must.

The mechanical system designer needs to take into consideration the effect on agent distribution through the risk, when the risk is operational and in use. Particular attention should be paid to large permanent obstructions such as columns.

To ensure full and long reliability of systems containers should be manufactured in accordance with one of the specifications listed below:—

- EN 1964-2;
- ISO 9809-2;
- EC 84/525;
- EC 99/36.

Valves must be of differential pressure design and should not require an explosive device to operate them. Detonators are not an acceptable method of system operation. Valve operating actuators available in electric (solenoid type), manual (local and remote) and pneumatic method of operation, and configured as appropriate for the normal use of the protected risk, are considered suitable and supplied by all system suppliers. All valve actuators must be capable of manually resetting and capable of being functionally tested at the quarterly service intervals without the need to replace consumable parts.

In all cases the cylinder must be fitted with a manual mechanical operating facility that requires two-action operation to prevent accidental actuation. This is usually achieved by means of a strike pin and actuator.

To indicate the release of the extinguishant into the pipework, a discharge pressure switch is



Figure 3 shows a typical gas suppression arrangement.

required to be installed passing a signal to the control panel. Visual indication should be given on the switch assembly that the system has discharged. Again this is provided as part of the complete kit supplied. Discharge nozzles are usually stainless steel and should be permanently marked to identify the manufacturer and drilling configuration. Figure 4 shows a typical nozzle.

Following the pipe installation and before the system is commissioned, all system pipework must be blown free of



Figure 4 — Typical nozzle



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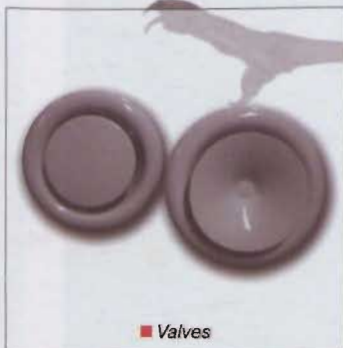
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■ Tools



■ Transfer grilles



■ Valves



■ ACA- Air curtains



■ GTDI Heat recovery



■ ATC AHU



## fire suppression systems

swarf/debris using compressed air, nitrogen or carbon dioxide to verify that flow is continuous, and the piping and nozzles are unobstructed. If the pipework runs outside the protected area or the system protects more than one compartment, the pipework must be tested for leakage. When pressurised to a minimum of 40 psig the pipework should not lose more than 20% of the test pressure within a 10-minute period.

Good practice also dictates that:—

- A maintenance agreement should be submitted to the property owner by the

supplier/installer;

- The system should be warranted for parts and labour for 12 months from the date of installation;
- The system supplier must specify maintenance to be performed on the system.

There are many suitable system suppliers within the Irish market but, in selecting one over another, it is important to verify their ability to install to the standards set out in this article.

**Martin Carpenter, PM Group is a Senior Electrical Engineer specialising in fire safety. He is a Fellow of the Institute of Engineers**

*in Ireland (FIEI) and has over 18 years experience in systems design, construction, project management and engineering across a broad range of projects. These include airports, power generation, hospitals, hotels, and internet hosting and data centres, in Ireland, the UK and US. Martin's expertise includes high-technology installations, power systems and design of life-safety systems in engineering design and management, project management, contract and Installation management, procurement and project planning, and business development.*

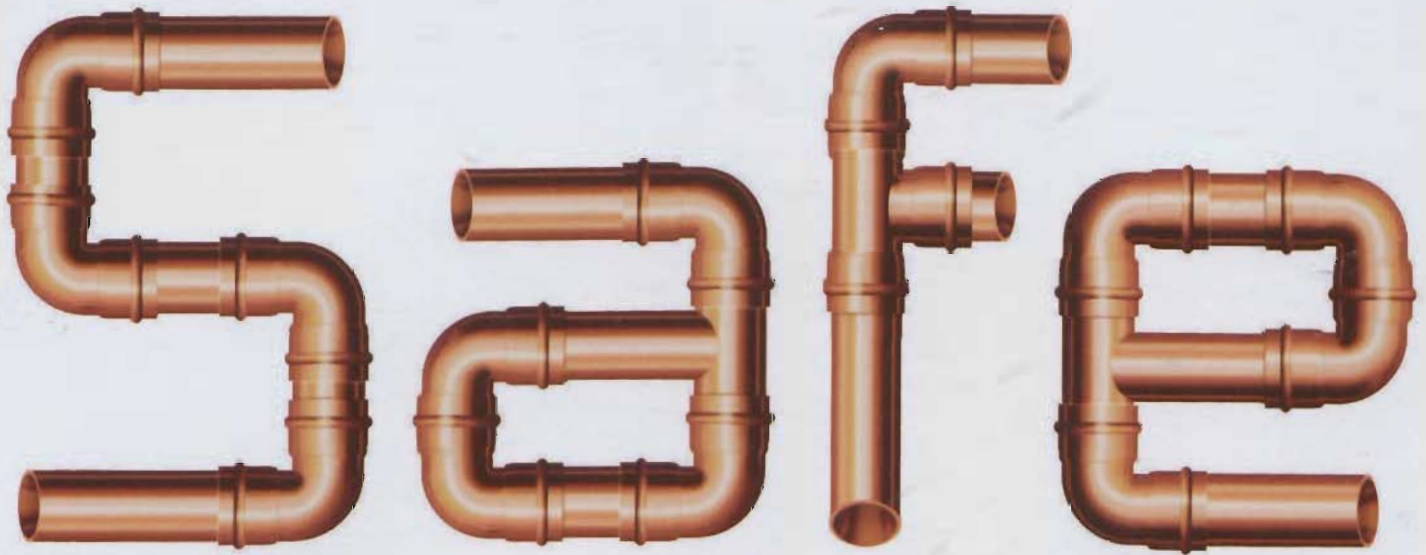


## Get Your Share of Ireland's €40 Billion Construction Output?

Thank you to those of you who have already returned your *Building Services Product Specification Guide* entry forms. These are now being processed for inclusion in both the printed and online versions of the *Guide*. Those of you who have not yet returned your entry forms need to do so as a matter of urgency.

If you have misplaced your form, or need additional forms, please contact Louise at email: [louise@pressline.ie](mailto:louise@pressline.ie) or tel: 01 - 288 5001





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## nothing petite about myson petite pack offer!

Potterton Myson (Irl) has just released details of the new Myson Petite Radpack offer which is now available from stock. These valves are boxed in 10 packs to facilitate the installer on site, with TRV and manual valves individually packaged together for added convenience. The Petite Radpack is a brand new offering from Myson and has been competitively priced to regain market share from cheaper and less effective control packs from unbranded suppliers.

"We are delighted to announce a special introductory list price for this product to assist us with the product launch", says Potterton Myson Sales Director Vincent Broderick, "and we will be taking orders immediately. The offer price is subject to valve discounts and moves us into a very competitive position in this relatively new sector of the valve market. Considering the complete product offering now available from Myson, we believe we are in a very strong position to support merchant sales to the installer".

The Petite TRV, which is also available as a single valve, incorporates the unique 2-way flow technology developed by Myson, meaning it will accept water flow from either direction without the need for any manual adjustment. The head of the TRV 2 Way is also aesthetically

pleasing and has won much acclaim for its ease of use and clear markings. Features include patented bonded disc assembly; 2-Way design; conforms to EN215; various body designs incorporating angle or straight, 15/22mm and BSP connections; direct, remote sensor or remote adjuster head options; nickel polished chrome or satin brass finish.

Myson Controls is a member of the Rettig Group which is a major force within the European heating market. The original Myson Controls factory was established at Newcastle West in 1969 and was purpose-built to manufacture, in high volume, a wide range of valve products for the heating industry. As demand grew through the 1980s for more sophisticated controls Myson expanded its product range to meet the market aspiration for

high-quality control products.

Following a major fire a few years ago the factory has been rebuilt to provide a new, state-of-the-art, production unit for the 21st century that will enable the development of an even wider range of controls.

Myson Heating Controls operates an environmental management system that adheres to the requirements of BS EN ISO 14001:2004. Environmental considerations are integrated into planning and decision-making at all management levels. The environmental impacts of all operations are carefully controlled and this includes:—

- Recycling of all waste materials and components;
- Optimising energy efficiency and consumption;
- Regular audits to

- monitor progress;
- Environmental consideration in design.

"In line with the company policy of continuous product development", says Broderick, "Myson Controls has expanded the portfolio to include innovative mechanical and electrical controls. All production is carried out within the strict quality control procedures of ISO 14001 Environmental Management System and ISO 9001 Quality Management System. Many of the products offered also comply with the European and British Quality Standards.

"As the installation of effective controls has a major impact on the energy consumption of heating and hot water systems, Potterton Myson (Irl) — as distributors of this expansive portfolio — provide the industry with a choice of controls that will increase operating efficiency and minimise energy consumption. By choosing Myson products consultants and installers alike provide their clients with improved energy efficiency, reduced running costs and lower carbon dioxide emissions," says Broderick.

Contact: Potterton Myson, (Irl).  
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The new Myson Petite Radpack



# Planning an environmental upgrade for your building?

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## Honeywell has the future all mapped out

- Honeywell leads the world in building control technology, improving the working environment, conserving energy and raising fire and security standards.

In fact, Honeywell building controls can match the needs of any building precisely, from individual controls to a fully integrated management control and protection system.

The market for Honeywell building controls covers every type of location and every kind of customer. And, whatever your requirement, our distributors in Ireland are on hand to provide advice and support. That's how we build strong working partnerships with all customers.

Honeywell's reputation for quality and reliability is second to none. And this, coupled with our market leading innovations, ensures that buildings run smoothly and can easily be upgraded or modified with products that will serve you effectively today and well into the next millennium.

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## Instruments &amp; Controls

## co2 control cuts hvac running costs

Carbon dioxide control provides a low cost, easily-installed means to save energy and reduce costs, in both new and existing HVAC installations.

Building HVAC systems are designed to provide fresh air to the maximum design occupancy of the space, but the space will not always be at the maximum occupancy — this is true of all buildings including schools, theatres, cinemas, supermarkets, offices, health centres, and conference centres. Energy can be saved by reducing the ventilation rate with actual occupancy, by monitoring CO<sub>2</sub> levels.

By optimising the ventilation in this way, energy is saved by reducing both the heat wasted by exhausting too much air and the energy used to move air. Air quality monitoring is encouraged by the new European standard EN 13779, which is based on the Energy Performance of Buildings Directive (EPBD) and aims to raise the energy efficiency of HVAC systems.

The latest designs of CO<sub>2</sub> sensor from Centraline by Honeywell use an optical principle based on the absorption properties of CO<sub>2</sub> (see figure 1). A sensor comprises:

- An infrared source which emits energy

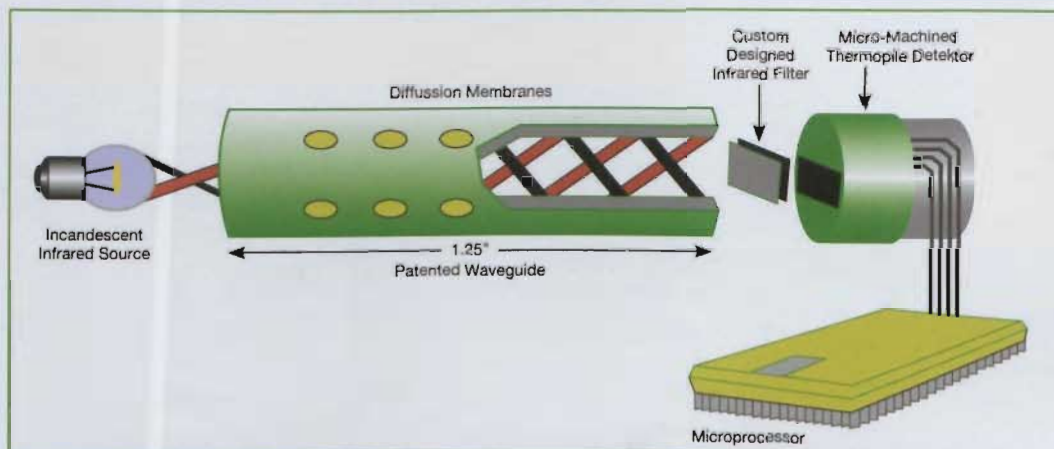


Figure 1: The Honeywell Centraline sensor comprises an infrared source which emits energy through a patented waveguide; an optical filter which passes only the required wavelength; and a detector to measure the amount of infrared energy.

through a patented waveguide;

- An optical filter which passes only the required wavelength;
- A detector to measure the amount of infrared energy.

The greater the CO<sub>2</sub> in the chamber, the less infrared energy reaches the detector. This has been found to be the most accurate measuring method, the CO<sub>2</sub> being selectively filtered among all other influences. There is no need for calibration.

Sensors may also contain a proportional controller or/and a simple limiting switch — small applications can then be handled directly by the sensor/controller. The sensors provide a linear output signal (0-10V or 4-20 mA) representing the CO<sub>2</sub> concentration in parts per million (ppm). The signal can be scaled for different measuring

ranges, depending on the sensor accuracy and application needs. In general, sensors should cover a CO<sub>2</sub> measuring range of 0-2000 ppm CO<sub>2</sub>.

In large open buildings such as cinemas and theatres, the sensor should be in the air exhaust duct; in other buildings it is better to have a wall-mounted unit for individual control in every room.

Air quality sensors based on oxidizable gases, such as odours and carbon monoxide, can be used where CO<sub>2</sub> is not the primary control variable, such as in restaurants and changing rooms in sports facilities.

The percentage energy savings achieved by applying air quality control in a HVAC control system from Centraline by Honeywell are in the double-digit range. The controls also

increase HVAC plant lifespan and reduce equipment noise. Centraline is the Honeywell Partners brand for energy efficiency building control. Centraline Partner companies are experts in installing such systems and can advise planners and building operators. Partners receive regular training from Centraline in the technologies and the new directives, and are committed to deliver excellence during project design, installation, commissioning and lifetime support.

For more information on energy efficiency and a list of Centraline Partners see the animated web site "Centraline City" at [www.centraline.com](http://www.centraline.com). This also includes sample buildings and applications comprising a wealth of solutions using well-proven Centraline by Honeywell technologies.



# MYSON the made in Ireland brand

Built specifically for Ireland, only Myson supply 1/2" valves directly from their new state of the art factory at Newcastle West, Co Limerick, including the ever popular TRV 2 WAY, the new Petite RADPAK and the MPE range of motorised valves. Also check out the new range of Programmable Room Thermostats built especially for the Irish market. **Myson Controls - Made here for you.**

## Programmable Room Thermostats



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Published by ARROW@TU Dublin, 2008



# Sunshine-Drenched MEBSCA Golf Outing

For the sixth time in its 26-year history, the annual MEBSCA (Mechanical Engineering and Building Services Contractors Association) Golf Outing took place in Newlands Golf Club early last month. An excellent turnout on the day was rewarded with one of the few rain-free, gloriously-sunny, afternoons of the summer. The participants thoroughly enjoyed the day which was followed by a beautiful dinner in the Clubhouse later that evening.

There are just two prizes presented at the outing and MEBSCA President John Doherty of McGrattan and Kenny did the honours. Taking the Vice-President's prize in second place was last year's winner, Michael Kearney of Burlington Engineering. He had a score of 33 points and plays off a handicap of 9. Meanwhile, the President's Prize and the Eamon McGrattan Memorial Cup was won by James Rael of Rael & Son Ltd. He plays off 12 and had 34 points.

John Doherty thanked all the members for the good turn out and extended a special welcome to guests Tony Gillen, Des Binley, Michael McDonagh and Edwin Kenny. He stated that he was delighted to see some newcomers at the event and hoped that this trend would continue in the years to come.

The evening concluded with a special thanks to Des Binley, John White and Dymphna Mullally for their contribution in organising and running the event.

Now it just remains to be seen if James will make it two in a row next August!

Des Binley, Newlands Golf Club (and past MEBSCA member).



Michael Kearney, Burlington Engineering, receives the Vice-President's prize from John Doherty, MEBSCA President



James Rael of Rael & Son Ltd, receives the Eamon McGrattan Memorial Cup from John Doherty, MEBSCA President





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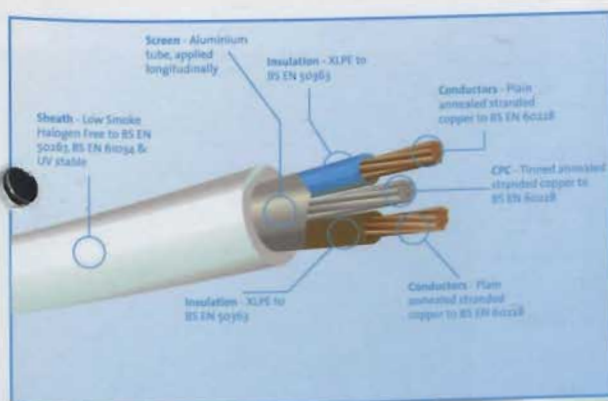
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# GUARDIAN™

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IDH Guardian™ is the cable of choice to meet clauses 522.6.3 and 522.6.6 of the Irish National Wiring Rules ET 101 3rd Edition including Amendment No.2 2004/A2:2005. IDH Guardian™ has been tested to meet the requirements of IS 273 and exceed the requirements of BS 8436 with an operating voltage up to and including 600/1000V.



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### SPECIFICATIONS

Voltage Grade	600/1000 volts
Core Colours	2 core - Brown and Blue; 3 core - Brown, Black and Grey 4 core - Blue, Brown, Black and Grey

IDH Guardian™ is manufactured under Irish Driver-Harris Quality Management BS EN ISO 9001-2000 system which is certified by BASEC and LPCB.

IDH Guardian™ Cables are approved to IS 273 - BS 8436 and comply to the following performance standards:

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## Energy Institute Accreditation for DIT Electrical Services & Energy Management Programmes

**F**ollowing an accreditation visit to DIT earlier this year, the Energy Institute (EI) has granted provisional accreditation to the Kevin Street BSc honours degree in Electrical Services & Energy Management, and the MSc degree in Energy Management. The level of accreditation granted for the BSc is CEng (partial) and for the MSc, CEng (further learning).

This is a very important development in that these programmes now provide a route to CEng and full professional status. Full accreditation will not be granted until the first intake of students has graduated in 2010. Graduates of these programmes may then apply for full membership of the Energy Institute. In the meantime all students on the programmes are automatically granted student membership of the Energy Institute.

The Energy Institute is a chartered professional membership body for those working in energy with a combined membership of over 13,500 individuals and 300 companies across 100 countries. It sees itself as providing an independent focal point and a powerful voice to engage business and industry, government, academia and the public, while promoting the safe, environmentally-responsible and efficient supply and use of energy in all its forms and

applications. See [www.energyinst.org.uk/](http://www.energyinst.org.uk/).

Both DIT Programmes commenced in the academic year 2007/08 and had a very successful first year with a combined enrolment of 70 students. The first year intake for next academic year is already fully booked up.

The BSc honours degree in Electrical Services & Energy Management (DT018) is a two-year advanced entry, part-time programme, running three evenings per week for two 13-week semesters. Entrants to this programme must have successfully completed the Bachelor of Engineering Technology degree in Electrical Services Engineering, or its equivalent. It is hoped to run this programme as a full-time one-year programme commencing in September 2009.

The MSc degree in Energy Management (DT015) is a three-year, part-time, programme, running three evenings per week for two 13-week semesters. The third year of the programme involves completion of an industry-based dissertation. Entrants to this programme will require at least a 2.2 honours degree in engineering or science or equivalent.

Given the part-time nature of these programmes, the DIT hopes that these programmes will strengthen ties with industry and promote joint DIT/industry research into energy-related topics.





# Hager Media Hub — Getting Connected With the Future



TN421B



TN411B



TN003S



Only a few months ago Hager saw the successful launch of the Tebis TX home and building automation system into the Irish market. This remarkable system has since been complemented with the introduction of the Hager Media Hub, which is now in stock.

Today's rapidly-growing communications and information technology sector is seeing a dramatic increase in the amount of data being transferred in applications such as the Internet, telephone and television. This increase calls for constant improvement in data networking in the home. All large manufacturers and providers offer network-compatible products today. The Internet offers films and music 24 hours per day, as well as limitless communication through email and messaging. Shopping and bank transactions are more and more often completed from the comfort of the home.

Hager's Media Hub is essentially a "Standard Board" for structured cabling. It will combine the advantages of the central consumer unit (by using the tried and trusted Hager enclosures and its modular concept) with the need to have a neat solution of linking all the Cat5e and coax cabling in one central place.

With the Hager Media Hub each Cat5e cable from the various rooms in a building is connected to a DIN-rail RJ45 module within the Hager enclosure. By using a modular phone splitter, an ADSL filter and/or a broadband modem within the enclosure, the various RJ45 outlets around the house can be customised easily to its designated use with small patch cables linking the DIN-rail RJ45 modules to the intended application outlets. The patch panel concept also supports the creation of a secure internal computer network in the house by using the Hager Media Hub for connecting the various RJ45 outlets to computers and printers in different rooms.

In a similar fashion the TV signal

can be distributed throughout the house by means of a DIN-rail mounted TV splitter which is connected to the coax cables leading to the different rooms and TV sockets around the apartment or house.

The use of this system is not restricted to the standard Hager type consumer unit. For custom specification projects, depending on the application, Hager recommends the Volta metal enclosure range or the larger FW Cabinet range, all available as surface or flush mounting.

Whatever the application or customer requirements, the Media Hub is easy to install and will offer the end-user a solution to a secure data transfer package as well as even more comfort and convenience at home. To coincide with the introduction of this range of products Hager holds dedicated training sessions for installers and other professionals.

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# face to face

ANNA KOSIEL



# W

ith the declining number of students opting for engineering places in Irish universities, it is somewhat ironic that Anna Kosiel, the subject of this month's *Face to Face*, comes from a country where engineering graduates are so plentiful that many of them have to go abroad to find employment.

Anna, who has been working as a building services engineer with Arup Consulting Engineers for the last four years, comes from Wroclaw in Poland, a city of about 600,000 people. Because of her strengths in mathematics she was always destined to follow a career in engineering or the sciences, and so it was no surprise that she eventually pursued a degree in environmental engineering.

On graduation she completed her Masters and then began to look for employment. While she did work briefly in Poland, she had always planned to travel and so, in 2004, she actively sought out opportunities abroad. Her original intention was to work in the UK or Holland but, with some of her college friends from the same course already working in Ireland, she decided to join them and come to Dublin.

Anna sought work with a number of building services companies in Ireland, one of them being Arup Consulting. She applied for a CAD technician post at first but was told that, in respect of her qualifications, it had to be checked to see whether there would shortly be a position available in the design team. After a month she was offered an engineering technician position with the company, initially for six months, whereupon she then assumed the role of design engineer. She is currently working as a project engineer.

She is enjoying her time in Ireland, perhaps even more so now that she has an Irish fiancé. That said, it did take her some time to get a handle on, and acclimatise to, some elements of living in Ireland. For instance, she was somewhat surprised at the poor state of our public transport infrastructure, while she also finds our limited bank opening hours restrictive. Public transport is more accessible in Poland while some bank branches and post offices are open outside the normal 9 to 5, including Saturdays. This allows people carry out their business without having to take time off work.



# face to face

ANNA KOSIEL

*"Anna Kosiel, the subject of this month's Face to Face, comes from a country where engineering graduates are so plentiful that many of them have to go abroad to find employment."*



"Finding a place to live was also a strange experience", says Anna. "To begin with, rents are quite expensive. Then there is the concept of friends, and even strangers, sharing either houses or apartments. As college students we are used to sharing accommodation in Poland but, once you get a job, that is unheard of. Young professionals never share. The cost of other essentials such as food, transport, entertainment and eating out also took some getting used to, not to mention the weather!"

Anna refers to these issues, not as drawbacks, but simply in a matter-of-fact way. They are the things she initially found most difficult about living in Ireland but has since, like the rest of us, come to accept. Moreover, they far outweigh the many positives she has encountered.

Anna finds that, in general, Irish people are more friendly, with strangers inclined to acknowledge you and smile at you on the street, even say hello.

She particularly likes the workplace atmosphere and the genuine openness and acceptance she has experienced. She is also taken with the lack of formality, and especially the open friendliness of people in senior positions, which is so unlike the Polish workplace.

As for the work itself, she says that engineering principles are fundamentally the same the world over so there was no great problem in that respect. The challenge was in learning how they are applied to suit climatic conditions in Ireland, and of course to conform with relevant Building Regulations. Regulatory control, and implementation, is much stricter in Poland and so she finds the Irish system somewhat relaxed.

Learning to think through technical engineering principles, and discuss them, in English was also a hurdle to overcome. While her English is excellent, she obviously studied engineering in her native tongue and so it has taken time to think issues through in English when she is working, especially when engaging with colleagues and clients.

Does Anna Kosiel like living in Ireland? ... yes, she is definitely taken with living in Ireland. She visits her family in Wroclaw a couple of times a year, especially at Christmas, and they in turn come and visit her here, but overall she regards Dublin as her home. She thinks we have a beautiful country and has travelled extensively to see places of historical and cultural interest all over the 32 counties. She has embraced the Irish experience, warts and all, and so far seems intent on staying around for more.



# BSRIA Confirms 'Lindab Safe' Efficiency

**A**s the building services industry endeavours to meet demands for ever-lower carbon emissions, a recent BSRIA study revealed strong evidence to support a new approach to circular ductwork. It also points the way to major reductions in air leakage and wasted fan power, plus substantial cuts in overall system cost.

BSRIA carried out the intensive programme of testing and evaluation to compare Lindab's Safe ductwork system with conventional circular ductwork and fittings. Both Lindab Safe and the traditional ductwork system were installed by an experienced contractor under actual site conditions in a test area created within a London warehouse.

Identical configurations were used to represent the type of ductwork runs typically used during office fit-out projects. Installation time was carefully monitored and both systems were subjected to an air leakage test when completed. The results were quite dramatic.



The Lindab Safe system cut installation time in half and cost 20% less when compared to the traditional approach. Crucial savings in air leakage were just as significant. At a static duct pressure of 500 Pa, the air leakage rate from the Lindab Safe ductwork was 43.8% of that from the system constructed with traditional components. Tests showed that Lindab Safe achieved better than Air Tightness Class C (EN 12237) while the conventional approach achieved only Class B.

Lindab's Safe system comprises a complete range of pre-sealed components designed to create a circular ductwork system with minimum leakage in the shortest possible time. The unique double-lipped gasket ensures a perfectly-sealed joint every time, without the need for any additional sealants. Lindab Safe fittings also feature rolled edges for greater dimensional accuracy and to make them more rigid and safer to handle and install. It is available in Eurovent sizes from 80mm to 2000mm diameter.

The BSRIA test programme threw a sharp spotlight on the key

differences between Lindab Safe and the conventional approach. The latter employed plain-ended fittings requiring mastic sealant, or sealing tape, wherever fittings were connected to the lengths of ductwork. No sealant or tape was required for the Lindab Safe system, which is factory-fitted with an integral, high-performance, double seal. This means it can be tested and/or put into operation immediately. Systems relying on tapes or sealants to prevent air leakage require a minimum 24-hour curing period before they can be put into action.

Sealant alone accounted for just under 10% of the overall cost of the conventional system. In addition to financial savings, the sealant-free approach has obvious benefits for both the environment and the building occupier's health. In a large commercial project hundreds, if not thousands, of sealant cartridges might be required, all of which need controlled disposal.

In conclusion, the BSRIA report describes the air tightness of the Lindab Safe system as being "significantly better" than that of ductwork constructed using traditional components. "Low air leakage performance," says the report, "helps reduce energy consumption through decreased fan workload. Ensuring that a greater percentage of conditioned air reaches the intended areas also improves control of the internal environment."



Pre-gasketed circular ductwork system: Standard approach (left) and innovative approach (right)



# Another Side Of ...



## Michael Burns



**M**ichael Burns of Crystal Air is well known within building services circles, and especially in the air movement sector. Generally he would be regarded as quiet, unassuming and self-effacing. He is indeed all these things but, his other side is one of a dynamic, competitive football player who is still playing and coaching the game.

Such is his love affair with football that he still plays in the senior leagues during the winter season but, instead of taking a break in the summer, he plays in the combined counties football league Over 35 Division which plays out over the "off-season". In fact, he just led his team to the championship title as captain.

Paradoxically, Mike comes from very famous GAA lineage. His father played in eight senior all Ireland hurling finals for Tipperary (seven out of the 10 in the 1960s), winning five along the way. Not surprisingly, Mike also played both hurling and gaelic football but, from the age of about 12 onwards, soccer was his first love. He was also very good at it.

At the age of 15 he had trials in the UK with Bournemouth and Birmingham City. Harry Redknapp was in charge of Bournemouth at the time and, while the trials went well, it did not work out. Mike returned to Ireland to continue his schooling at Nenagh CBS and somehow managed to play hurling and gaelic football for the school, in addition to soccer with Limerick City. During this time he managed to play for the Tipperary U16 representative side, win a Colleges All-Ireland Championship with the school, and get a trial for the Irish soccer youths team. He next went to Carlow College to pursue his business studies. During his time there he continued to play soccer for Nenagh while, at the same time, turning out for the Tipperary U21 squad.

On completion of his studies he went to the UK to work and immediately found himself a soccer club. In fact, for most of his time there he played at a fairly serious level in both the Saturday and Sunday leagues. He came back to Ireland a few years later and yes, you've

guessed it, continued to play football before returning to the UK to work 1997 ... and of course play football. Come 2003 it was back to Ireland again. His first objective was to find a home, which he duly did in Tullamore. Almost as high on the agenda was finding a local soccer team. This he also did and here he is today, almost 25 years since his UK trials, still playing and winning trophies at a fairly serious level.

Mike concedes that his burning ambition from when he can remember was to be a professional footballer. Though it never came to pass, he says he is very grateful to have had the experiences he has had — and continues to have — through the sport.

While still playing, he has also turned his hand to coaching. He currently looks after his son's team in the U9 league and has already completed the Kick Start 1 and Kick Start 2 coaching courses. Just like his father, his son plays all codes — soccer, gaelic football and hurling ... a case of here we go again?



## sponsor Dublin Providers Group

## captain's day at forrest little

The Captain's day at Forrest Little was played in near-perfect conditions with the course in excellent order and the weather magnificent. Some fine scores were returned on the day with Jim Smith getting a hole-in-one at the 11th. It was a day to remember for Captain Michael Kearney and all who participated, the fine meal and presentation ceremony at the dinner capping a great event.

Details of all the prize winners are as follows:—

## Overall Winner

Kieran Ryan (11) 41pts

## Class 1

First — John Lavelle (10) 30pts;

Second — Des Prendergast (6) 35pts;

Third — Brendan Keavney (11) 33pts.

## Class 2

First — Jim Treacy (15) 36pts;

Second — Derek Whelan (15) 35pts;

Third — John White (14) 34pts.

## Class 3

First — Padraig Gillen (21) 38pts;

Second — Des Bindley (19) 36pts (Back 9);

Third — George Carlton (17) 36pts.

## Front Nine

Gerry Maher 21pts.

## Back Nine

Michael Kearney 22pts.

## Visitor's Prize

Shane Tobin 38pts.

## Past Captain's Prize

John Lavelle 38pts.



Overall Winner — BTU Captain Michael Kearney with overall winner Kieran Ryan



Class 3, second — Des Bindley with Terry Maher, DPL, sponsor



Past Captain's Prize — BTU Captain Michael Kearney with John Lavelle and Terry Maher, DPL



# Airflow Services & Sanyo

## 'The Perfect Partnership'



Denis Moynihan, Managing Director,  
Airflow Services

Airflow Services Ltd of Little Island in Cork was established in 1996 and very quickly carved out a niche as one of the leading refrigeration maintenance providers to the pharmaceutical and petrochemical sectors. As its reputation grew, so too did the client portfolio. The scope of the services provided also expanded, much of it led by clients who wanted Airflow to take responsibility for all of their refrigeration and related air movement and air quality requirements.

Hence the success story Airflow Services represents today. It currently employs 23 people, including directors Denis and Marina Moynihan and is regarded as one of the leading sales, commissioning and maintenance providers of heating, ventilation, refrigeration and air conditioning systems in the country. For management and operational reasons its activities are divided into three separate sections — commissioning, maintenance and ac installation — but engineers frequently cross over from one to another as and when the need arises.

James O'Donoghue heads up commissioning and is responsible

for HVAC air balancing, LPHW and CHW water balancing, room pressure balancing, room particle counting and aerosol filter testing (DOP). Daniel Desmond is in charge of maintenance at Pfizer; Liam Moynihan and Anthony Connolly are responsible for maintenance on all other sites; and Jason O'Byrne looks after air conditioning.

Key to Airflow's initial success was the strength of the engineering expertise provided, something which to this day still underscores all facets of the business. Company founder Denis Moynihan is a fully-qualified refrigeration engineer and keen believer in the concept of continuous professional development. A significant budget is set aside each year to fund participation in relevant courses, seminars and workshops with all employees being actively encouraged to maintain and further their knowledge base.

For instance, James O'Donoghue is currently studying at masters level in the area of building services and renewable energy. Meanwhile colleagues Robert Ryan, Kieran Murphy and Steven Tett are furthering their education with the HVAC and Building Services Commissioning Engineers Association, while Anthony Connolly has just passed the professional level for Cleanroom Testing set by the Irish Cleanroom Society.

The same philosophy applies to new staff intake. Airflow has a very close working relationship with FAS, where it tries to source all its apprentices, and CIT from whom it sources engineering graduates.

Indicative of success of this policy is the fact that today, 12 years on, Airflow still retains the first ever maintenance contract it was

awarded by one of the world's leading Cork-based pharmaceutical companies. While it started out with one dedicated, site-based engineer, there are now four assigned to the project.

Not surprisingly, the business has grown considerably over the last decade with year-on-year turnover showing a marked improvement. However, it was the entry into air conditioning sales and installation which had the most dramatic impact. Joining forces with Sanyo as one of its key dealers in the Munster region has seen turnover increase significantly in the space of two years. Coincidentally, Airflow had just moved to its new, more extensive, premises at Little Island and this proved fortuitous in that the product flow-through and staff numbers increased accordingly.

Despite the success to date, Denis Moynihan and his colleagues have their feet firmly on the ground. They recognise and acknowledge what they have achieved but, rather than see it as having arrived at a destination, they regard it as the foundation upon which the company will go forward into the next decade and beyond.



David Colbert of Sanyo pictured with  
Airflow Services' James Casey



# REHAU Passive House Technology at University Creative Homes Project



REHAU is a partner in the BASF House Project at Nottingham University's School of the Built Environment. It is designed to demonstrate how passive heating and ventilation can be successfully achieved in a property delivering a low-carbon footprint at an affordable cost.

Based on a 20-house development, the BASF House could be built with a budget of £70,000. This is largely down to the fact that it utilises passive design and high performance insulation materials rather than costly and experimental renewable technologies.

As a leading polymer producer, REHAU has supplied a range of materials for the house, including PVC-U window and curtain walling systems for the openings and glazed elevations, polymer pipework for the plumbing and drainage, a ground air heat exchanger and rainwater management system.

The BASF House is compact with a floor area of 8.9m x 7m but it feels light and airy thanks to the use of a full-height glazed REHAU sun space on the south facing elevation. This contributes towards solar gain in winter and reduces the requirement for artificial lighting.

The REHAU ground air heat exchanger works alongside the sun

space to provide a constant supply of ventilated air to the house, which is pre-cooled by up to 14K from below ground during summer and pre-warmed by up to 9K during winter.

This REHAU AWADUKT Thermo system had already attracted interest from Germany's Passive House Institute as a solution for providing the ventilation necessary in such a highly-insulated property and, like all of the components in the BASF house, its performance will be monitored over the course of the next year.

The REHAU RAURAIN rainwater management system has also been installed to collect and filter rainwater in an underground tank. This in turn is distributed via a pump and separate pipe system for all non-potable water requirements such as flushing toilets, washing machines and watering the garden, all of which minimises the treated mains water requirement.

Structurally, the house uses BASF Neopor insulating concrete formwork (ICF) on the ground floor and structural insulated panels (SIPS) above. Modified SmartBoard plasterboard on some internal walls stores and releases heat depending on the internal temperature.

Currently, the house achieves a Code Level 4 under the UK Government's Code for Sustainable Homes but this could be upgraded to a Level 5 with the addition of on-site micro-generation of electricity.

Nottingham University students have moved in to the house so that its energy consumption can be monitored during general occupancy over a 12 month period.

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# CIBSE News

## Annual Golf Outing Huge Success

A total of 21 teams took part in the recent CIBSE Annual Golf Outing which was held in Edmondstown Golf Club. The weather was fantastic and the course in great condition, thanks to the extra work done by the grounds staff the night before.

Richard O'Hare of Edmondstown was the starter on the day and he ensured that the teams left the first tee box at the allotted time. A special thanks also go to Peter O'Dowd and Martin Keogh for helping to score the cards.

The outing took the form of a Stableford competition with the Chairman's Prize being presented to the CIBSE member with the best individual score, and the PJ Doyle Trophy going to the overall individual winner. The main event was a team event with the best two scores on each hole, and all four scores on the 18th, making up each team's final tally.

The outing was one of the most successful to date, thanks to both the participants and sponsors, the latter of whom included — Sirius Engineering; McGrattan & Kenny; BOC Gases; Wilo; Cylon Controls; Edmondstown GC; and

Crystal Air. Golf balls for all, Cobra hold-alls, vouchers and cheques were all generously donated and gratefully received.

The winner of the PJ Doyle Trophy was Martin Finnegan, playing off 15, with a great score of 39 points. The Chairman's Prize was won by Colin Murphy, playing off 9, with 32 points.

The team results were as follows:—

First — Keddington 92 pts;

Second — Control Aer 89pts (on the back 9);

Third — Lindab (Irl) 89pts;

Fourth — Flogas 87pts;

Front Nine — Patrick Lynch 41pts;

Back Nine — Eurofluid 45pts;

Nearest the Pin — Sean Considine, 0.52 metres;

Longest Drive — Peter O'Shea

CIBSE Republic of Ireland Region Chairman Gerrard Keating made the presentations.



Colin Murphy receiving the Chairman's Prize from Gerard Keating, CIBSE Chairman



Team Eurofluid — Bernard Costelloe accepting the prize from Gerard Keating on behalf of his team mates Shay Cuddihy, Liam Trundle and Tom Glynn



Team Patrick Lynch — Eamon Carthy with Stephen Murray, Paul Butler, Dan Lawlor and Gerard Keating



Team Keddington — Chris Berkeley receiving the winners prize from Gerard Keating on behalf of his team mates Matt Porter, Wally Blennerhassett and Brian Coogan



Left: Team Lindab (Irl) — Ronan Flanagan with Jim Bollard, Gerard Keating, Gerry O'Callaghan and Gerard Digney



# sauermann hosts refrigeration 'ryder cup'

Ernie Bate of Sauermann UK recently hosted the inaugural refrigeration Ryder Cup competition at his home course in St Anne's Old Links near Blackpool in the UK. Ernie is a member of the Northern Refrigeration Golfing Society (NRGS) and the idea for the challenge arose out of a conversation with Gasco's Mark Kiely who is Secretary of the Refrigeration & Air Conditioning Golfing Society (RACGS).

A 12-member RACGS team travelled to St Anne's where they were royally hosted by Ernie and his NRGS colleagues. However, when it came to the competition proper the gloves came off. The weather was beautiful, the course excellent if challenging, with the greens running like lightning.

It was a closely-fought battle with the visitors matching the locals shot for shot, despite the latter's home course advantage. The tournament went down to the final putt on the last hole with NRGS pipping RACGS to take the match, 6.5 to 5.5.

With the "battle" over (and won!) NRGS reverted to their role as excellent hosts. They presented the RACGS team members with commemorative silver plates and ties, but held on to the magnificent replica Ryder Cup. However, they have agreed to put it up for grabs in the return match which will take place over 13/14 August 2009 in Ireland.



Roland Bradley with Phil Underwood, Peter Clayton and Sean Stenson



Ernie Bate with Joe Warren, Zac Keane and Murray Sharp



Ken Bristow with Billy Queally, Stephen Mulvaney and Mike Kerrigan



Peter Alwood with Matt Noonan, Paul Airey and Mark Kiely

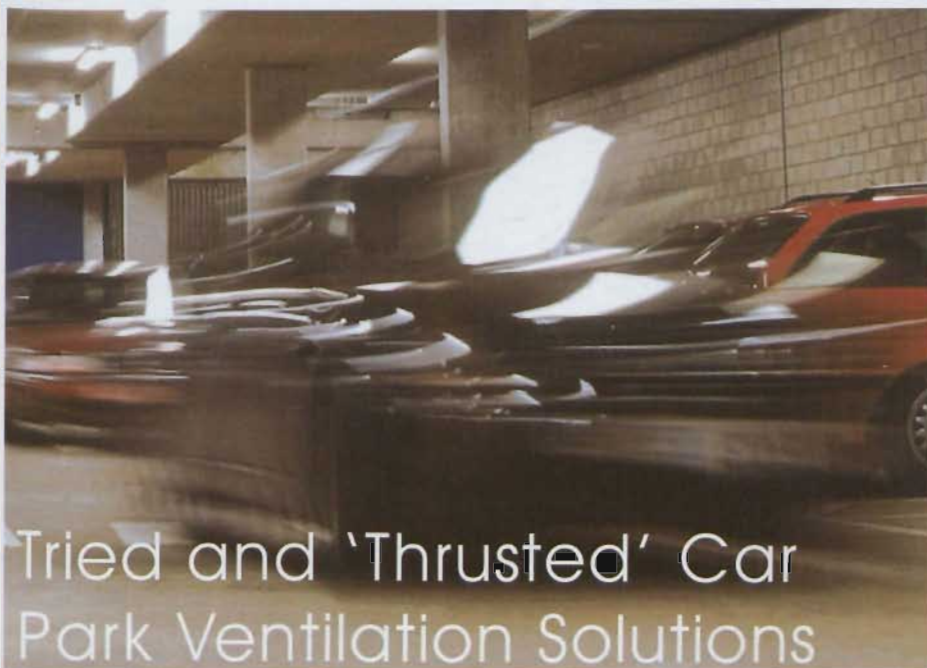


Paul Kelly with Michael Clancy, Ian Whittaker and Jack Elstead



Ger Darcy with Simon Daly, John Lynagh and George Boardman





to assist means of escape for car park occupants.

The Flakt Woods range includes both jet thrust and induction thrust products. Both require minimal ductwork. The use of fans in place of ductwork can deliver significant savings and free up large amounts of space for other services. This can help to reduce overall building costs and increase efficiency elsewhere in the building through a reduction in the installed length of other services.

There is a physical phenomenon that makes both technologies particularly effective, differentiating them from traditional ducted systems. This is the efficient transfer of momentum from one point to another as air moves through the car park towards the extract point, or a number of extract points, depending on the layout of the car park and the system objective. The momentum transfer is created by the high velocity air at the discharge of the fan, which varies depending on choice of product.

Induction thrust fans are based on centrifugal fan technology and have a shallow profile, making them suitable for car parks where significant height restrictions apply. They are most suited to large car parks requiring a unidirectional system for pollution and clearance of smoke.

Jet thrust fans are based on in-line axial fan technology, giving the additional benefit of reversibility. This is achieved through use of specially-designed, truly symmetrical, impellers providing efficient flow through the fan in both directions. These fans offer flexibility when switching between pollution and smoke ventilation, making them ideally suited to smoke control applications.

System design is equally important and so, in addition to manual calculations, Flakt Woods also offers in-house Computational Fluid Dynamics (CFD) when devising ventilation solutions for enclosed car parks.

## Tried and 'Thrusted' Car Park Ventilation Solutions

To the untrained eye, a car park is merely somewhere to leave a vehicle and one is much like any other. However, to the architect, builder, engineer or approving authority, car parks are not all the same and each has its own specific ventilation requirements. Here *Gavin Power and Stephen Marry of Flakt Woods* review current advances in ventilation techniques, especially in relation to regulation compliance.

In Ireland, there are two main reference documents of interest:—

- (1) Irish Building Regulations Section B3 fire spread;
- (2) BS 7346 Part 7 (Code of Practice on functional recommendations and calculation methods for smoke and heat control systems for covered car parks).

Both of these are available for general use to assist with the design and approval process.

From an air quality viewpoint, the main pollutants that are damaging to health are carbon monoxide (CO), nitrogen oxides (NOx), unburned hydrocarbons and fine particles. These pollutants can be removed effectively from an enclosed car park, given the correct design approach.

Approved Document B and BS 7346 Part 7 mainly focus on the

ventilation of fires within enclosed spaces, where efficient removal of heat and toxic fumes is the primary objective. A system designed to meet this requirement, without any specific need to address tenability criteria within the car park, is by definition referred to as smoke clearance or purging. This normally involves using main extract fans to provide an air change rate (typically 10 air changes per hour). The distribution of air through the space is either achieved using ductwork or a series of fans positioned close to the ceiling, such as jet fans.

The use of jet fans in car parks is now widely accepted as an alternative to traditional ducted systems, the main advantage being the ability to control the direction of smoke travel, in addition to the removal of heat and toxic fumes from a fire.

BS 7346 Part 7 gives recommendations for specific tenability criteria for smoke control systems including, but not limited to, recommended design fire sizes, supply air velocity criteria, smoke visibility criteria and operational recommendations. There are two types of smoke control system as described within BS 7346 Part 7. The first aims to achieve tenable conditions for the fire brigade to enter the car park, and locate and tackle the fire; the second is



# Plumb Lines

heard it on the grapevine ...



## Oh Spare Me 'Footprint' Mania!

Is it just me or does anyone else feel totally downtrodden by the recent wave of footprint mania. Just as I was beginning to get a handle on the massive eco damage my carbon footprint causes, I'm now distraught at the impact of my so-called water footprint.

The problem began fairly innocently enough recently. There I was about to enjoy a light lunch and read of my paper when my attention was drawn to a story on water consumption. Being an industry-related topic I thought, what the hell, I'd best have a quick look before turning to the sports pages. Big mistake!

By the time I'd finished reading about virtual water, water footprint, external water footprint, green water and blue water, I'd totally lost my appetite. You have to picture the scene. Quite intentionally my lunch comprised simple, healthy fare including organic greens, a little rice, a couple of slices of organic beef, a tomato, and some water. This was to be accompanied by a glass of milk and followed by a coffee.

Boy was I being irresponsible. You see each one of my green beans takes 4lts of water to produce; 1kg of meat requires a staggering 15,500lts of water; 1kg of rice 3400lts of water; 1lt of milk 1,000lts of water; a cup of coffee 140lts of water; and, somewhat ironically, my 1lt of bottled water requires 9lts of water to produce. To confound my discomfort I also learned that the short-sleeved cotton shirt I was wearing used up 2,7000lts in the making!

Even more damning than the sheer volume of water my western-size footprint is responsible for is the percentage of that water taken from countries facing acute water shortages. For instance, in Morocco it reportedly takes 13lts of water to produce one tomato. So, far from helping their economies by buying Fair Trade produce from countries like Kenya, Brazil, Morocco, South Africa and even Spain, it appears I am in fact contributing to the permanent demise of their groundwater resources. Just what is a person supposed to do?

Moreover, apparently different diets have different footprints. A meat and dairy-based diet is responsible for about 5,000lts of water a day while a vegetarian diet uses 2,000lts. Ergo, we should all become vegetarians but, if we do, does the increased demand change the dynamics?

How water is used is a very serious matter and no doubt the facts and figures as revealed recently can be substantiated. However, presenting these facts in a manner specifically designed to make those of us lucky enough to have sufficient to eat and drink feel guilty is not the solution. The reality is that people use water for drinking, cooking and washing, and even more for producing goods. Please let us get on with it in our own responsible way — as the vast majority of people do — without continuously stamping on us with multiple footprints!





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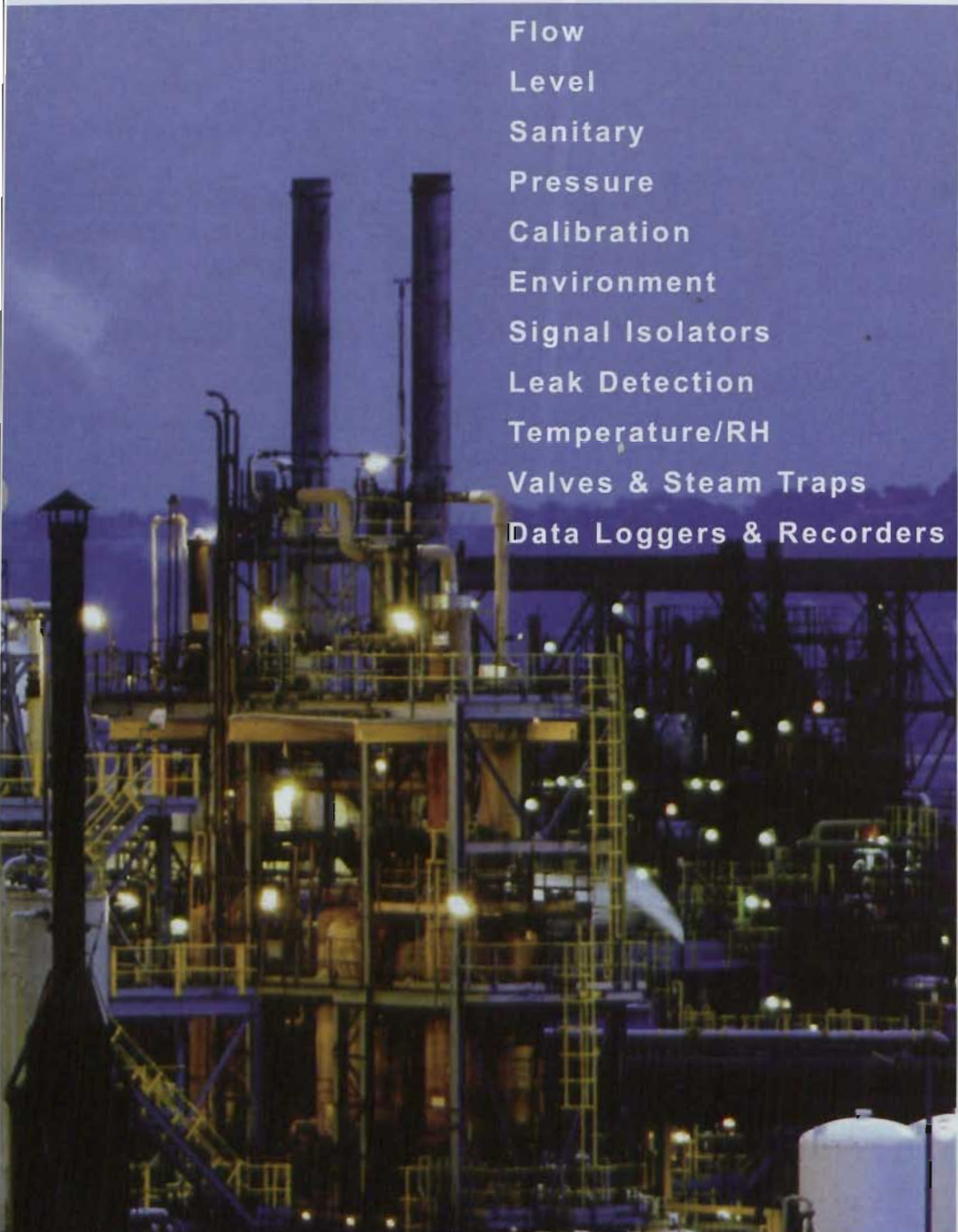


# Fit & Forget

*Building Services News, Vol. 47, Iss. 8 [2008], Art. 1*

## Instruments & Controls

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